DIVISION OF RESEARCH AND INNOVATION

I-TEAM BRIEF

Networked Traveler

Real-time multi-modal transit information for the entire San Francisco-San Jose US 101 commute corridor.

Many travelers feel that the wait times and unpredictability of transit make it insufficiently reliable and time efficient to use regularly. Real-time information (GPS-based rather than schedule-based) is much more reliable than schedule information, and has recently become available from a limited number of transit agencies. But real-time information covers only limited agencies and falls short of helping commuters who have multi-modal commutes across the region. ***The Caltrans I-Team is supporting research that provides real-time transit and traffic information across all modes of transport in a targeted San Francisco Bay Area region, delivering the information in a variety of useful formats designed to enhance the traveler experience.***

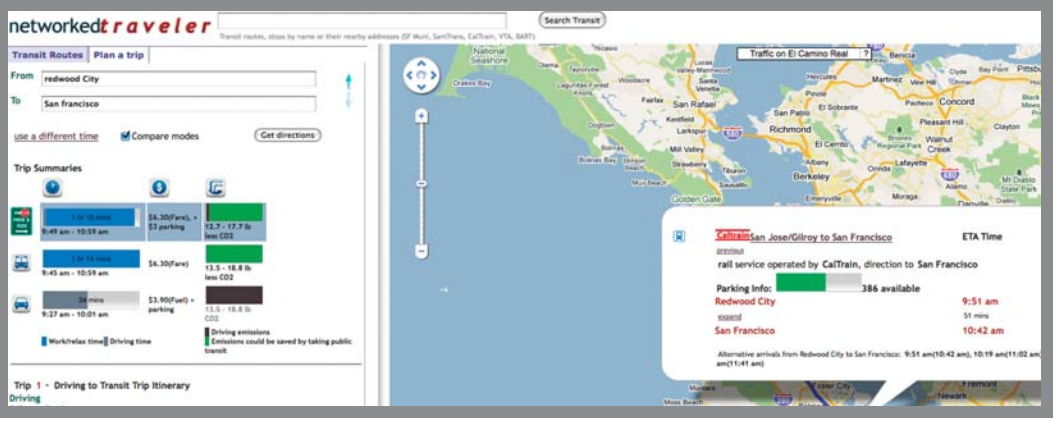
READY TO DEPLOY

Networked Traveler provides comprehensive real-time information for all modes of transport within the US 101 Commute corridor between San Francisco and San Jose, including Caltrain, SamTrans buses, Valley Transportation Authority (VTA), BART, Muni, bicycling, and traffic.

NEW AND IMPROVED

- Trip-planner uses a simple color-coded display to compare travel times for current traffic conditions, GPS-based next-train/next-bus information, and, for shorter distances, bicycles routes, along with costs and CO2 emissions for each mode.
- Mobile application provides transit riders with personalized in-transit updates and notifications of when a traveler's train is approaching their platform, how the long until it arrives at the destination station, and when the train is approaching its destination.
- Vibrations and sound alerts benefit travelers who have hearing and visual impairments, who are distracted by work or music, and who are unfamiliar with their route.
- Trip-planning website displays the number of parking spots available at four key Caltrain stations: Millbrae, Palo Alto, Redwood City, and Menlo Park.
- A freeway sign on US 101 at Millbrae Ave displays Caltrain parking availability.
- For driver safety, "geofencing" technology is used to block the cell phone application while a driver is in a moving automobile.

The trip planner compares real-time train and bus data, live drive time estimates, and parking availability.



The Innovation Team (I-Team) at the Caltrans Division of Research and Innovation, in cooperation with its partners, develops proven, ready-to-deploy innovations in methods, materials, and technologies that enable Caltrans to provide the most effective management of public services, resources, and infrastructure.

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About Networked Traveler

The Networked Traveler project and associated software were developed by the California Partners for Advanced Transit and Highways (PATH), a research center housed at the Institute of Transportation Studies at the University of California, Berkeley. The research was part of Caltrans's SafeTrip-21 research award from the U.S. Department of Transportation.

GET STARTED

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Learn More

UC Berkeley Press Release,
Aug. 31, 2010
http://www.berkeley.edu/news/its/20100831

Berkeley Transportation Letter, ITS Berkeley research-news article, fall 2010.
http://its.berkeley.edu/btl/2010/fall/networked-traveler

Design and Implementation of a Traveler Information Tool with Integrated Real-time Transit Information and Multi-modal Trip Planning,
Liping Zhang, et al.
http://www.networkedtraveler.org/nttrb.pdf

A Multimodal Trip Planning System Incorporating the Park-and-Ride Mode and Real-time Traffic/Transit Information, Jing-Quan Li et al.
http://www.networkedtraveler.org/tripplanner.pdf

Caltrans I-TEAM BRIEF

SUCCESSES

- The pilot currently has more than 500 registered users and well over 1000 more unregistered visitors to the website.
- Project completed the GPS-locator instrumentation of Caltrain and SamTrans buses, providing that major agency with its first real-time information.
- Project completed instrumention of Caltrain Park-and-Ride lots with car-counting sensors and transmitters to send the information to the Networked Traveler systems.
- Project partners include the Metropolitan Transportation Commission (MTC), San Mateo County Transit District (SamTrans), which operates Caltrain; Valley Transportation Authority, NAVTEQ, ParkingCarma, and SpeedInfo.
- Networked Traveler data now feeds into a SamTrans kiosk at the Millbrae BART station, replacing schedule information with more accurate real-time data.

GET READY

The research project is currently underway. The data is relevant only for trips in the commute corridor between San Francisco and San Jose. Anyone with Internet access can use the trip planner.

The trip planner, the transit applications, and a complete list of supported phones are accessible from http://www.networkedtraveler.org. Supported smart phones include: iPhones (OS 3 and 4), Android, and Windows-based systems.

Anyone in the commute corridor with a supported GPS-enabled smart phone can use the mobile application. Mobile app users must provide contact information. (This is a mandatory research protocol; no individually identified travel data will be studies or retained by the researchers.)

Real-time alerts for transit riders can alleviate the uncertainties of a transit trip. Left to right: Next Train, Train Approaching, and Time Left alerts. (Photos: Jay Sullivan)